



REIS

Real-Time Electoral Information System

The SAES Electoral Suite constitutes the most advanced and auditable automated voting technology in the world. SAES guarantees highly reliable elections, voter-friendly interfaces, smooth performance and swift results, using state-of-the-art operational design, software tools and security methods and techniques, supporting Smartmatic's novel, proprietary hardware devices as well as mainstream computer technology. SAES stringent quality provisions and ease of operation are noticeable at all stages of an election: during election preparation and configuration, during the actual Election Day, and also when counting votes after the closing of an election, followed by computing and broadcasting results.

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Overview

After the polls close, the goal of any modern voting system is to ensure all votes are securely collected, validated, counted, and that final results are confidently computed, delivered and published, all in the shortest possible time.

That is where the last component in the voting system comes in, the canvassing subsystem of SAES: Smartmatic's Real-Time Electoral Information System (REIS), a computer software system developed specifically to fulfill a wide breadth of stringent electoral requirements that goes far beyond the usual counting and publishing functions of most other products.

Most voting systems in the market go no further than providing a module to process election results, which in some instances act as an extension of their Election Management System, or EMS. In contrast, the REIS system is the result of the truly first initiative oriented toward providing a specialized system for the canvassing and proclamation processes, incorporating an international, worldwide approach and capable of addressing most if not all of the electoral systems in use today.

REIS fully supports all categories of electoral formulas, from the simplest (i.e., referendums) to the most complex of vote aggregation methods to yield final results, including single-winner and multiple-winner, including majority rule and proportional representation methods. In the case of party-list proportional representation, highest averages methods such as the D'Hondt, Hagenbach-Bischoff, and the Sainte-Laguë methods are fully supported.

REIS has built-in support for communications capabilities once the election process has ended, in order to receive transmitted voting data directly from voting machines or sent by

intermediate voting data collected by gathering centers. REIS also features the novel "store-and-forward" method where lower-ranking centers can forward results to higher-level ones. It also has provisions to accept authorized manual votes from polling places in municipalities or regions having no voting machines.

REIS is unique in its support of either a federated mode or a distributed mode of operation. In the first case, each local electoral authority receives and processes, canvasses and proclaims winners at its local jurisdiction; whereas in the second case it performs the same functions while still having all its electoral data stored in a central location, providing a very practical failover mechanism, which is secure in both the digital and the juridical aspects. REIS can also be configured to operate in a hybrid mode.

Among its security provisions, REIS validates all received data, ensures the legitimacy of the sources, and subsequently processes and aggregates said election data to obtain partial and final results. Besides, all data managed by REIS is encrypted using the Advanced Encryption Standard (AES) algorithm, a symmetric 256-bit key cipher that has been adopted by the US government for Top-Secret level information. Election results data is received using SSL, accepting digital certificates and two-way authentication. This means, for example, that local election authorities can affix individual signatures to their voting information being processed.

REIS constantly monitors itself, and absolutely forbids and blocks any self-modifying, dynamically loaded, or interpreted code to ensure that the software remains unchanged, retaining its full integrity.



Performance of REIS during Election Day

- REIS receives, validates and processes election data sent from SAES voting machines at poll closure.
- Creates and maintains a real-time audit record, where all operations performed as well as error and information messages are logged and timestamped, providing online supervision for all events and interactions of users with the system.
- Manages and monitors user authentication and access rights of the system.
- Accumulates results from the SAES voting machines and of manual votes for each contest.
- Supports on-going queries about the election in progress, at a wide spectrum of detail.
- Allows queries about partial or final results at various levels, showing tallies from the outcome of a single voting machine, in any one of the polling centers, up to those of the whole election.
- Issues the corresponding on-demand tally reports, likewise at the required level of detail.
- Computes the winners of contests using any of the approved vote aggregation methods supported.

Key Advantages and Benefits of REIS

- REIS is 100% failsafe, 100% reliable, and 100% auditable.
- It is extremely fast, allowing obtaining final results in a matter of minutes.
- It can be fully customized to meet the legal requirements of the electoral authority.
- Uses a standardized, high level of data encryption.
- Fully protected against intrusion and/or extraneous data manipulation by third parties.
- It has a very complete and user-friendly interface for system operators
- Final results can be published within minutes after the polls have closed.
- Cost-effective: two operators can accomplish in minutes what used to take several days to a large team of people.

